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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,632	12/14/2001	Jonathan F. Hester	56754US002	6407

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EXAMINER
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VO, HAI

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/017,632

Applicant(s)

HESTER ET AL.

Examiner

Hai Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 29,32,34-54,56 and 57 is/are pending in the application.
- 4a) Of the above claim(s) 37 and 43-53 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32,39 and 54 is/are allowed.
- 6) ☒ Claim(s) 29,34,35,38, 40-42,56 and 57 is/are rejected.
- 7) ☒ Claim(s) 36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

1. The specification objections are withdrawn in view of the present amendment.
2. The art rejections over WO 99/65595 taken alone and in combination with other references are withdrawn.
3. The art rejections over WO 200044472 taken alone and in combination with other references are maintained.
4. The double patenting rejections are withdrawn.
5. Claims 32, 39 and 54 are allowed.
6. Claim 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Claim Objections***

7. Claims 29, 32, 34-36, and 56 objected to because of the following informalities:  
Claim 29, line 2, the comma between "one" and "gas permeable" needs to be deleted to avoid grammatical errors. The same token is applied to claim 32. Line 3, the comma between "one" and "gas permeable" needs to be deleted. Further, claim 32, line 7, a comma is needed between "part a" and "said gas delivery layer". Claim 56, line 10, a comma is needed between "microbial population" and "said microbial support layer". Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 38, 42, 56, and 57 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 200044472 substantially as set forth in the 04/09/04 Office Action. US 6,280,824 to Insley et al is relied on as an equivalent form of WO 200044472 for convenience. The art rejections have been maintained for the following reasons. Applicants argue that the cap layer of Insley '824 is not water impermeable. The examiner disagrees. Insley '824 teaches the cap layer made of a non-porous polyethylene film which is exactly the same material Applicants use to form the gas permeable, water impermeable layer (page 7, line 12-13 of Applicants' specification). Therefore, it is not seen that the cap layer of Insley is not water impermeable as argued by Applicants. This is in line with *Ex parte Tummers et al.* 137 USPQ 444 which holds that if the chemical composition of the claimed article of manufacture recited in the claims is the same as the identical structure of the prior art, it is immaterial that the applicant recognized different advantages flowing therefrom than did the prior art. Further, Insley '824 teaches the filtration medial array comprising at least one cap layer and a contoured film layer proximate to the cap layer (figure 5). The filtration media array is useful as a room air cleaner or a respirator filter (column 9, lines 38-43). This suggests that the channels are for gas delivery. The contoured film layer has a plurality of flow channels through which gas can be conveyed to the cap layer (figure 5, column 4, lines 59-67). Likewise, the cap layer is gas permeable. Accordingly, the cap layer is gas permeable and water impermeable. Insley '824

discloses the filtration media array comprising a cap layer and a contoured film layer (figure 5). Insley also teaches the filtration media array including a filter layer of non-woven fibrous material over the face surface (column 8, lines 40-45). Likewise, the filter layer is located on the cap layer opposite to the contoured film layer. Insley's filter layer corresponds to the claimed microbial support layer. The filter layer is loaded with fillers such as activated carbon for removing organic molecules or deodorization (column 6, lines 50-51). The filter layer carries a net positive surface charge (column 6, lines 10-15). It is the examiner's position that Insley '824 anticipates the claimed subject matter.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 29, 34, 35, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 200044472, as applied to claim 38 above, and further in view of Jensvold et al (US 6,153,097) substantially as set forth in the 04/09/04 Office Action. Figure 10 of Insley '824 shows that the filtration medium array is wound into a helix. Insley '924 discloses the cap layer having a surface that is of corrugated in shape (column 3, lines 60-61). US'824 does not specifically disclose the gas delivery layer formed from a material that is porous, and gas permeable. Jensvold teaches a gas separation membrane device comprising an

array of hollow fiber membranes for gas delivery to provide a cost effective gas separation membrane device with a significant improvement in selectivity with a commercially acceptable loss of productivity (abstract, column 2, lines 1-4, figure 3). Jensvold teaches that the membrane is microporous (column 8, lines 8-9). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use substitute the hollow fiber membrane or the microporous membrane for the contoured film for cost effectiveness and high separation efficiency. The art rejections have been maintained for the following reasons. Applicants argue that there is no reason to combine Jensvold with Insley '824 since the Insley '824 reference is related to an air filter while Jensvold invention is directed to a gas separating membrane. There is no reason to expect that a microporous membrane taught for use in Jensvold's gas separation device would function in Insley's air filter. The arguments are not found persuasive for patentability since both Insley and Jensvold inventions are related to the technology of fluid separation. Insley '824 teaches every element of the presently claimed subject matter except the gas delivery layer being formed from a material that is porous, and gas permeable. Jensvold teaches a gas separation membrane device comprising an array of hollow fiber membranes for gas delivery to provide a cost effective gas separation membrane device with a significant improvement in selectivity with a commercially acceptable loss of productivity (abstract, column 2, lines 1-4, figure 3). Jensvold teaches that the membrane is microporous (column 8, lines 8-9). Therefore, one of skilled in the

art would be motivated to replace the non-porous contoured film layer with the porous membrane of the Jensvold invention for the high separation efficiency and cost effectiveness. The motivation to combine the two cited references is strong and sufficient and therefore, the art rejections are sustained.

12. The double patenting rejections and the art rejections over WO 99/65595 taken alone and in combination with other references are withdrawn by the present response. Insley '412 (WO 99/65595) does not teach or suggest a fluid separation device comprising a gas permeable, water impermeable microporous layer with a gas permeable polymeric coating.

***Allowable Subject Matter***

13. Claims 32 and 39 are allowed. The reasons for allowance were already stated in the 04/09/04 Office Action.

14. Claim 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Insley invention is directed to an air filter. It would not have been obvious to add a microbial population adjacent to the cap layer of the air filter because to do so would destroy the air filter for its intended utility.

15. Claim 54 is allowed for the following reasons. Insley '824 discloses the filtration media array comprising a cap layer and a contoured film layer (figure 5). Insley '824 teaches the filtration media array including a filter layer of non-woven fibrous material over the face surface (column 8, lines 40-45). Likewise, the filter layer is

located on the cap layer opposite to the contoured film layer. Insley's filter layer corresponds to the claimed microbial support layer. Insley'824 discloses the filter layer is treated with fluorochemical coating to improve the filter layer's ability to repel oil and water. Therefore, it would not have been obvious to make the filter layer hydrophilic by one of five specified means because to do so would destroy the water repellency of the filter layer.

### ***Conclusion***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on M,T,Th, F, 7:00-4:30 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

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